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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
LIOU, ERIC	
ART UNIT	**PAPER NUMBER**
3628	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/784,273	OBAYASHI ET AL.	
	Examiner	Art Unit	
	Eric Liou	3628	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 7/18/07.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-26 is/are pending in the application.

4a) Of the above claim(s) 18-26 is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-17 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date 2/24/04, 6/7/06, and 12/6/06.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of invention I (claims 1-17) in the reply filed on 7/18/07 is acknowledged. The traversal is on the ground(s) that the search and examination of the entire application can be made without serious burden. This is not found persuasive because the Examiner believes that the restriction is proper since the subcombinations are distinct from each other and are shown to be separately usable. Invention II (claims 18-26) has separate utility such as storing information on power generation costs in a table, deleting the oldest information from the table, and determining the power generation cost of the onboard battery based on the information in the table. The Examiner notes, it would be a serious burden to search invention II because of the additional above-mentioned utility.

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 18-26 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 7/18/07.

3. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 8-10, and 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. Claim 8 recites the limitation "the information includes a difference between the power generation cost of the onboard battery and that of the other power source that supplies power to the onboard battery." It is unclear what is meant by the limitation, "the power generation cost of the onboard battery." Power is generated from the power sources and is supplied to the battery as recited by claim 1. Since the battery is not performing the step of generating power, it is unclear how the onboard battery can have a power generation cost. The Examiner interprets the limitation to mean there is a difference between the cost (fuel efficiency of vehicle) of supplying power to the onboard battery between the multiple power sources.

7. Claim 12 recites the phrase "the other electric system" in lines 2-3. It is unclear which electric system is "the other" when the vehicle has more than two electric systems.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Shioiri et al., U.S. Patent No. 6,201,312.

10. As per claim 1, Shioiri discloses a method for controlling at least one of vehicular electric systems having a plurality of power sources that supplies power to an onboard electrical load and an onboard battery, comprising: obtaining information on power generation costs that are costs of generating unit power by the power sources (Shioiri: col. 2, lines 48-67 – col. 3, lines 1-37; col. 4, lines 19-38, "engine" and "motor/generator"; col. 6, lines 52-60; col. 7, lines 23- 30; Figure 9; col. 10, lines 27-67 – col. 11, lines 1-25 – The Examiner interprets energy and fuel efficiency of the various driving modes to be power generation cost information.) and adjusting at least one of a distribution of power supply of the power sources (Shioiri: col. 4, lines 19-38, "engine" and "motor/generator"; col. 6, lines 52-60; col. 7, lines 23- 30; col. 7, lines 65-67 – col. 8, lines 1-21; Figure 9; col. 10, lines 27-67 – col. 11, lines 1-25), a receiving power rate of the onboard electrical loads (Shioiri: col. 4, lines 19-38; col. 6, lines 52-60; col. 7, lines 23- 30; Figure 9; col. 10, lines 27-67 – col. 11, lines 1-25), and a receiving power rate of the onboard battery in such a manner that a consumed power cost is reduced based on the information (Shioiri: col. 4, lines 19-38; col. 6, lines 52-60; col. 7, lines 23- 30; Figure 9; col. 10, lines 27-67 – col. 11, lines 1-25).

11. As per claim 2, Shioiri discloses the method of claim 1 as described above. Shioiri further discloses obtaining information on available power supplies from the power sources (Shioiri: col. 6, lines 52-60; Figure 9; col. 10, lines 27-67 – col. 11, lines 1-25), wherein the adjusting step is performed based on the information on the power generation costs and the

available power supplies from the power sources (Shioiri: col. 6, lines 52-60; Figure 9; col. 10, lines 27-67 – col. 11, lines 1-25).

12. As per claim 3, Shioiri discloses the method of claim 2 as described above. Shioiri further discloses controlling the power generation of the power sources based on the distribution of power supply (Shioiri: col. 6, lines 52-60; Figure 9; col. 10, lines 27-67 – col. 11, lines 1-25); and outputting an instruction signal to a device that supplies power to the power sources for controlling an output based on the distribution of power supply (Shioiri: col. 5, lines 46-53; Figure 9; col. 10, lines 27-67 – col. 11, lines 1-25).

13. As per claim 4, Shioiri discloses the method of claim 1 as described above. Shioiri further discloses determining a distribution of power supply of the power sources to the onboard battery based on the information (Shioiri: col. 7, lines 23- 43; col. 10, lines 27-67 – col. 11, lines 1-25).

14. As per claim 5, Shioiri discloses the method of claim 4 as described above. Shioiri further discloses wherein the determining step determines the distribution of power supply of the power sources based on the power generation costs so that the power sources that generate power at lower costs supply larger amounts of power (Shioiri: col. 7, lines 23- 43; col. 10, lines 27-67 – col. 11, lines 1-25).

15. As per claim 6, Shioiri discloses the method of claim 4 as described above. Shioiri further discloses wherein the power sources include an engine of a hybrid vehicle and a regenerative braking system (Shioiri: col. 4, lines 22-30; col. 7, lines 23-30; col. 10, lines 5-9).

16. As per claim 7, Shioiri discloses the method of claim 6 as described above. Shioiri further discloses wherein the regenerative braking system has a higher priority to supply power to the onboard battery for charge (Shioiri: col. 7, lines 23-30; col. 10, lines 5-9).

17. As per claim 8, Shioiri discloses the method of claim 4 as described above. Shioiri further discloses wherein the information includes a difference between the power generation cost of the onboard battery and that of the other power source that supplies power to the onboard battery (Shioiri: col. 2, lines 48-67 – col. 3, lines 1-37; col. 7, lines 23- 43; col. 10, lines 27-67 – col. 11, lines 1-25 – The Examiner notes, there is a difference in fuel efficiency depending on the driving mode.).

18. As per claim 9, Shioiri discloses the method of claim 8 as described above. Shioiri further discloses the information includes a state of charge of the onboard battery in addition to the difference (Shioiri: col. 6, lines 64-67 – The Examiner notes, comparing the charge of a battery to a predetermined level indicates information regarding a state of charge of the battery.).

19. As per claim 10, Shioiri discloses the method of claim 9 as described above. Shioiri further discloses wherein the state of charge of the onboard battery is determined using an amount of power charged in the onboard battery and a variation in the amount (Shioiri: col. 6, lines 64-67; col. 7, lines 43-50).

20. As per claim 11, Shioiri discloses the method of claim 4 as described above. Shioiri further discloses distributing power from the power sources to the electrical loads (Shioiri: col. 10, lines 10-20 – The Examiner notes, it is implied that the power sources will respond to the power demands of the vehicle by distributing the power to the respective loads.); and distributing power remaining in the power sources after the distribution to the electrical loads (Shioiri: col. 4,

lines 18-38 – The Examiner notes, it is implied that the power remaining in the power sources will be distributed in one way (i.e. as wasted energy or among different components of the vehicle).).

21. As per claim 12, Shioiri discloses the method of claim 1 as described above. Shioiri further discloses supplying power from the electric system to the other electric system (Shioiri: col. 4, lines 30-38; col. 10, lines 10-20).

22. As per claim 13, Shioiri discloses the method of claim 1 as described above. Shioiri further discloses wherein: the information includes a power generation cost of power generation by an engine (Shioiri: col. 2, lines 60-63); and the power generation cost is determined based on engine efficiency at an engine operating point (Shioiri: col. 2, lines 60-63; col. 4, lines 53-67 – col. 5, lines 1-5).

23. As per claim 14, Shioiri discloses the method of claim 13 as described above. Shioiri further discloses correcting the power generation cost based on information on generator efficiency (Shioiri: col. 2, lines 60-63; col. 11, lines 12-16).

24. As per claim 15, Shioiri discloses the method of claim 1 as described above. Shioiri further discloses wherein: the information includes a power generation cost of power generation by an engine (Shioiri: col. 2, lines 60-63); and the power generation cost is determined based on an increase in consumed fuel for driving the engine due to the power generation (Shioiri: col. 2, lines 60-63; col. 4, lines 53-67 – col. 5, lines 1-5; col. 9, lines 57-67 – col. 10, lines 1-20).

25. As per claim 16, Shioiri discloses a method for controlling at least one of vehicular electric systems having a plurality of power sources including an engine-driven generator that supplies power to an onboard electrical load and an onboard battery, comprising: obtaining

information on power generation costs that are costs of generating unit power by the onboard battery charged by the power sources (Shioiri: col. 2, lines 48-67 - col. 3, lines 1-37; col. 6, lines 52-60; col. 7, lines 23- 30; col. 7, lines 51-67 – col. 8, lines 1-21 – The Examiner interprets energy and fuel efficiency of the motor to be power generation cost information.); and adjusting discharge of the onboard battery that functions as a power source based on the information (Shioiri: col. 7, lines 51-67 – col. 8, lines 1-21).

26. As per claim 17, Shioiri discloses the method of claim 16 as described above. Shioiri further discloses adjusting power generation of the generator based on the information (Shioiri: col. 7, lines 51-67 – col. 8, lines 1-21).

Conclusion

27. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Severinksy, U.S. Patent 6,209,672, drawn to hybrid vehicles. Mikami et al., U.S. Patent No. 5,839,533, drawn to an apparatus for controlling the electric generator of hybrid drive vehicles. Urban et al., U.S. Patent No. 5,704,440, drawn to an energy distribution method for hybrid electric vehicles.

The Examiner has cited particular portions of the references as applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings in the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested that the Applicant, in preparing the responses, fully consider the references in entirety as potentially teaching all or

part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric Liou whose telephone number is 571-270-1359. The examiner can normally be reached on Monday - Friday, 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Hayes can be reached on 571-272-6708. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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